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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/901,930	07/09/2001	Jae-Yoon Sim	9898-204	7100

7590

09/10/2003

MARGER JOHNSON & McCOLLOM, P.C.  
1030 S.W. Morrison Street  
Portland, OR 97205

EXAMINER
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CUNNINGHAM, TERRY D

ART UNIT	PAPER NUMBER
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2816

DATE MAILED: 09/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/901,930

Applicant(s)

SIM ET AL.

Examiner

Terry D. Cunningham

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☐ Claim(s) 1-63 is/are pending in the application.
- 4a) Of the above claim(s) 25-63 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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## **DETAILED ACTION**

### ***Reopen Prosecution***

This paper is in response to the Appeal Brief filed 16 June 2003. Prosecution on the merits is hereby reopened for the purposes of ensuring that all the requirements for Appeal are met and for introducing new grounds of rejection, which may reduce the issues for Appeal.

With respect to Applicant's remarks in the Appeals, Applicant provides a great deal of discussion concerning the meaning of the phrase "precharge signal". However, such a specific definition is not seen to be provided in the specification, let alone in the claims. Further, this discussion is seen to totally disregard the "broadest reasonable interpretation" of the phrase "precharge signal". For the record, Examiner points out that all supply generating charge pumps have two-stage operation. The first stage being the precharge stage and the second being the boost stage. Clearly, any signal that clocks the charge pump will cause the precharge and boost stages. Since this signal will provide "precharge" for the circuit, it would be more than reasonable to consider such to be a "precharge signal". However, to resolve this as an issue for Appeal, the following new grounds of rejection are hereby applied.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 6, 13 and 24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Since the claim is not claiming a memory circuit, it is not understood what a "word line precharge signal" would be with respect to a "voltage generator".

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***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over newly cited art to Park (USPN 5,367,489) in view of newly cited reference to Soneda et al. (USPN 5,856,918).

With respect to claims 1, 3, 6-8, 13, 17-20, 23 and 24, Park et al. discloses, in Fig. 1B, a circuit comprising; “a first charge pump (C5, C6 and the unlabelled transistors connected thereto)”; “an oscillator (OSC)”; “a second charge pump (C1-C4, G1-G4 and unlabelled transistors receiving  $\phi_{PHB}$ )”; “a word line precharge signal ( $\phi_{PHB}$ , see Col. 1)”. The reference to Park et al. fails to explicitly disclose using the alternate arrangement wherein the charge pump generates a negative voltage. However, it is notoriously well known in the art that many environments require a negative voltage word line rather than a positive boosted voltage. It is further notoriously well known in the art, as seen in Figs. 2, 4, 8 and 10 of Soneda et al. that to convert a voltage doubler to a negative voltage generator, it requires changing the conductivity types of the transistors of the charge pumps and changing the polarity of the clock signal. Therefore, to obtain the advantages of use in a negative voltage environment, it would have been

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obvious for one skilled in the art to convert the voltage doubler in Park et al. to a negative voltage generator such as disclosed by Soneda et al.

With respect to claims 1-5, 7-12 and 15-23, Park et al. discloses, in Fig. 6, 7A and 7B, a circuit comprising; “a first charge pump (130a)”; “an oscillator (110)”; “a second charge pump (130b)”; “a precharge signal (from precharge circuit 160 and/or 170)”; a “regulator (900)”; and “means for detecting (700)”. Similarly as above, Figs. 6, 7A and 7B the reference to Park et al. fails to explicitly disclose using the alternate arrangement wherein the charge pump generates a negative voltage. However, it would have been obvious for one skilled in the art to convert the voltage doubler in Park et al. to a negative voltage generator such as disclosed by Soneda et al., for similar reasons as discussed above.

### ***Conclusion***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Terry Cunningham whose telephone number is 703-308-4872. The examiner can normally be reached on Monday-Thursday from 7:30 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy P. Callahan can be reached on 703-308-4876. The fax phone numbers for Technology Center 2800 are 703-872-9318 for Before Final communications and 703-872-9319 for After Final communications. Please note, any faxed paper clearly stating **DRAFT** or **PROPOSED AMENDMENT** at the top will be forwarded directly to the Examiner. All others will be treated as a formal response and acted upon accordingly.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is 703-308-0956.

TC  
August 25, 2003

  
Terry D. Cunningham  
Primary Examiner  
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